DETAILED ACTION

Status of Claims

Claims 1, 6-7, 11-15 and 27-29 are currently pending.

Priority

This application, filed March 7, 2006, is a national stage entry of PCT/GB04/03938 filed September 15, 2004, and claims foreign priority to United Kingdom applications 0409133.6 and 0321608.2, filed April 23, 2004 and September 15, 2003 respectively. Applicants have provided certified copies of the United Kingdom applications.

Withdrawn Rejections and Response to Arguments

1. The rejections of record are withdrawn in view of Applicant's amendments.

2. Applicant's arguments with respect to claims 1, 6-7, 11-15 and 27-29 have been considered but are moot in view of the new ground(s) of rejection.

New Rejections Necessitated by Amendment

Claim Rejections - 35 USC § 112

3. The following is a quotation of the appropriate paragraph of 35 U.S.C. 112 that forms the basis for the rejections under this section made in this Office action:

> Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

4. Claim 14 is rejected under 35 U.S.C. 112, fourth paragraph, for failure to further limit the claim from which it depends. Claim 1 claims that the force control agent is

leucine and must be present from 2-10% by weight. Therefore, expanding the amount of force control agent to 20% does not further limit claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 1, 6-7, 11-14 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staniforth (EP 1 213 012) (pub. June 12, 2002) in view of Vectura (WO 01/78695) (pub. Oct. 25, 2001).**

Regarding claims 1, 14 and 27-29, Staniforth teaches improvements in and relating to powders for use in dry powder inhalers (title). The powder is comprised of an active material and an additive material wherein the additive material has been found to give an increased respirable fraction of the active material (abstract). The additive material is leucine and the active material may be heparin (claim 4 and para. 0043). Staniforth claims that the additive material is present at not more than 10% and that the powder comprises at least 80% by weight of active material (claims 8-9 and 24). When the additive material is to form a coating on the surface of the particles of active material, the additive may be added to the active material by co-spray drying (para. 0049). Advantageously, at least 95% by weight of the active particles have a particle size most preferably between about 0.1 and 5 micrometers (fine particle fraction)

However, Staniforth does not teach that the tapped density of the powder is at least 0.5 g/cc. Vectura cures this deficiency.

Vectura teaches pharmaceutical formulations for dry powder inhalers wherein the dry powder for inhalation is freely flowable (abstract). The powder has a fine particle fraction and has a tapped density of no more than 0.7g/cc (claims 1, 4-5 and 10).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of Staniforth with those of Vectura to use a tapped density of no more than 0.7g/cc. One of ordinary skill would have been motivated to do so to manipulate the flowability of the dry powder via a known manufacturing process.

With regard to the active and additive material weight percents, MPEP 2144.05 states that "[i]n the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a *prima facie* case of obviousness exists" quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Regarding claims 6-7, Staniforth claims that at least 95% by weight of the active particles have a particle size between 0.1 and 5 um (claim 27). MPEP 2144.05 states that "[i]n the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a *prima facie* case of obviousness exists" quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In the instant case, the claimed range overlaps the range of Staniforth and is therefore prima facie obvious. The size of the particles may be calculated by laser diffraction (para. 0045).

Regarding claims 11-13, Staniforth teaches that the additive material may be added to the active material from a suspension or solution (para. 0049).

9. **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Staniforth (EP 1 213 012) (pub. June 12, 2002) in view of Vectura (WO 01/78695) (pub. Oct. 25, 2001) as applied to claims 1, 6-7, 11-14 and 27-29 above, and further in view of Kuo et al. (US 6,518,239).**

Staniforth teaches each limitation of claims 1, 6-7, 11-14, 25 and 27-29. However, Staniforth fails to teach that the moisture content of the spray dried particles is adjusted. Kuo et al. cure this deficiency.

Regarding claim 15, Kuo et al. teach a method for increasing dispersibility of an active-agent containing formulation for administration to the lung (abstract). Kuo et al. teach that the spray dried particles may be spray freeze dried (column 12, lines 23-24). Applicants, in the instant specification, state that the moisture content may be adjusted by freeze drying the particles (p. 44).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of Stanifoth and Vectura with those of Kuo et al. One of ordinary skill would have been motivated to adjust the moisture content of the composition to maximize the stability of the composition and ease of delivery.

Conclusion

No claims are allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLETTA KENNEDY whose telephone number is (571)270-1343. The examiner can normally be reached on Monday through Thursday 11:30 to 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Gollamudi Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. K./
Examiner, Art Unit 1611

/Joanne Hama/
Primary Examiner, Art Unit 1632